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REPORT OF A SUCCESSFUL TREATMENT OF THORACIC PENETRATING TRAUMA TO THE IVC WALL IN A 13 YEAR OLD BOY BY AN AIR GUN BULLET

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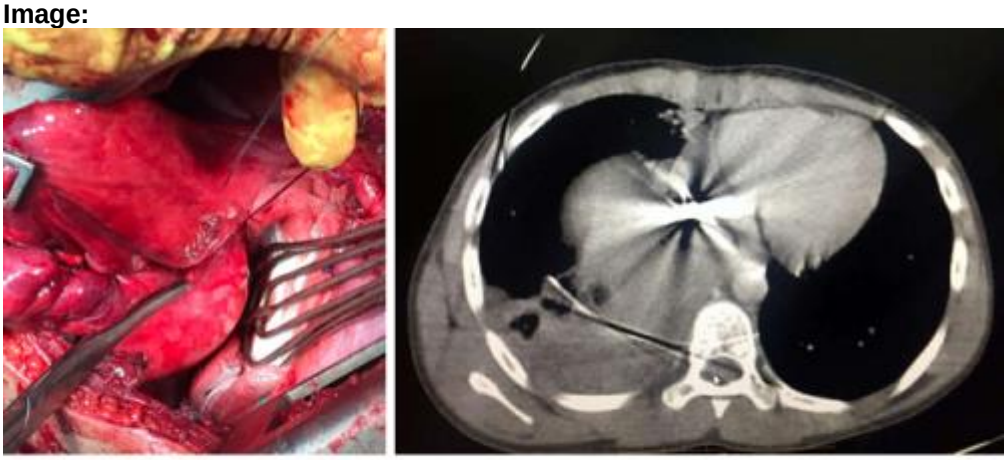
Introduction: Penetrating traumas to the thorax could be potentially serious. Although rare, vena caval penetrating injuries are the results of gunshot wounds. Whether caused by blunt or penetrating mechanisms, caval wounds are highly lethal so that half of the patients die before reaching the hospital and another 50% may die perioperatively. However, it is technically difficult vena caval repair with direct suturing technique can lead to narrowing and deep vein thrombosis.
Materials & Methods: In the case we are reporting, a 13 year old boy shot by an air gun through his right hemi thorax had referred to the trauma center. In his initial chest radiography the position of the bullet seemed to be in the middle mediastinum. He was then undergone the right sided thoracotomy with the preoperative diagnosis of right lower lobe laceration of the right lung and mediastinal injury. Having removed about 200 cc blood after thoracotomy and pericardiotomy, an air gun bullet appeared right in the wall of thoracic inferior vena cava that penetrated the right lung through and through on its way to IVC. There were not any ongoing bleeding because of its tightly package. Knowing that ligature of the IVC is not practicable and the cardiopulmonary bypass pump was not accessible, the only way to repair perforation was the release of the abdominal IVC, making an incision at the diaphragm then gripping it and immediate suturing the defect which was done successfully. Immediately following completing the vital assignment of potentially lethal bleeding source, tractotomy and ligature of small bronchi and vessels then repairing the diaphragmatic cut, finally a right chest tube and a pericardial tube were prepared.
Results: During staying at hospital no complications like rebleeding or air leakage occurred and the patient successfully improved.
Image:



The chest CT scan demonstrating metal artifact with the right hemothorax in the right and releasing the thoracic IVC and immediately suturing the mural defect in the left following the tractotomy procedure.

Conclusion: Considering that, a general surgeon at a trauma center may encounter a mediastinal penetrating trauma, it is necessary to him or her to know the basis of handling with the vital surgeries of mediastinal great vessels in the absence of cardiopulmonary pump.
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